

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims

Claim 1 (previously presented): A semiconductor device package comprising:

a semiconductor device affixed to an upper surface of a substrate, the semiconductor device having an upper surface;

a mold cap covering at least the upper surface of the semiconductor device, the mold cap having an upper surface;

a heat spreader affixed to at least a portion of the upper surface of the mold cap, the heat spreader being entirely external to the mold cap.

Claim 2 (original): The package of claim 1 wherein the semiconductor device is electrically connected to the substrate by wire bonds, and wherein the mold cap covers at least the upper surface of the substrate and the wire bonds.

Claim 3 (previously presented): The package of claim 1 wherein a portion of the heat spreader overlying the semiconductor device protrudes downward toward the upper surface of the semiconductor device, and a corresponding portion of the mold cap is thinner between the upper surface of the semiconductor device and the heat spreader than more peripherally.

Claim 4 (original): The package of claim 3 wherein the downwardly protruding portion of the heat spreader has a generally square shape in plan view.

Claim 5 (original): The package of claim 3 wherein the downwardly protruding portion of the heat spreader has a generally rectangular shape in plan view.

Claim 6 (original): The package of claim 3 wherein the downwardly protruding portion of the heat spreader has a generally round shape in plan view.

Claim 7 (original): The package of claim 3 wherein the downwardly protruding portion of the heat spreader has a generally rectangular shape in transverse sectional view.

Claim 8 (original): The package of claim 3 wherein the downwardly protruding portion of the heat spreader has a generally trapezoidal shape in transverse sectional view.

Claim 9 (original): The package of claim 1 in which the height from the substrate to the top of the package is less than or equal to about 1.17 mm.

Claim 10 (previously presented): The package of claim 1 wherein the heat spreader is entirely free of direct contact with the substrate.

Claim 11 (new): The package of claim 1 wherein the heat spreader substantially covers the entire surface of the mold cap.

Claim 12 (new): The package of claim 1 wherein the heat spreader substantially covers the entire surface of the mold cap, and wherein a peripheral portion of the heat spreader extends down to the substrate adjacent the lower edges of the mold cap, and the heat spreader is entirely free of any direct attachment to the substrate.

Claim 13 (new): The package of claim 12 wherein the heat spreader is entirely free of direct contact with the substrate.

Claim 14 (new): A semiconductor device package comprising:

- a semiconductor device affixed to an upper surface of a substrate, the semiconductor device having an upper surface;

- a mold cap covering at least the upper surface of the semiconductor device, the mold cap having an upper surface;

- a heat spreader affixed by an adhesive to at least a portion of the upper surface of the mold cap, the heat spreader being entirely external to the mold cap.

Claim 15 (new): A semiconductor device package comprising:

- a semiconductor device affixed to an upper surface of a substrate, the semiconductor device having an upper surface;

- a mold cap covering at least the upper surface of the semiconductor device, the mold cap having an upper surface;

- a heat spreader affixed by a thin adhesive layer to at least a portion of the upper surface of the mold cap, the heat spreader being entirely external to the mold cap.

Claim 16 (new): A semiconductor device package comprising:

- a semiconductor device affixed to an upper surface of a substrate, the semiconductor device having an upper surface;

- a mold cap covering at least the upper surface of the semiconductor device, the mold cap having an upper surface;

- an adhesive covering at least a portion of the upper surface of the mold cap;

- a heat spreader attached over at least the portion of the upper surface of the mold cap having the adhesive thereon, the heat spreader being affixed to the mold cap by the adhesive, the heat spreader being entirely external to the mold cap.

Claim 17 (new): A semiconductor device package comprising:

a semiconductor device affixed to an upper surface of a substrate, the semiconductor device having an upper surface;

a mold cap covering at least the upper surface of the semiconductor device, the mold cap having an upper surface;

a thin adhesive layer covering at least a portion of the upper surface of the mold cap;

a heat spreader attached over at least the portion of the upper surface of the mold cap having the thin adhesive layer thereon, the heat spreader being affixed to the mold cap by the thin adhesive layer, the heat spreader being entirely external to the mold cap.